

WHAT IS CLAIMED IS:

1 1. A method for classifying defects comprising:
2 imaging an inspected object;
3 extracting an image of a defect candidate from an image obtained by said
4 imaging step;
5 classifying said extracted defect candidate image into a first category;
6 classifying said extracted defect candidate image into a second category; and
7 displaying on a screen said extracted defect candidate image and information
8 relating to said classification into said first category and information relating to said
9 classification into said second category.

1 2. The method for classifying defects as described in claim 1 wherein
2 said imaging of said inspected object is performed by illuminating and scanning an electron
3 beam focused on said inspected object and detecting, in synchronization with said scanning,
4 secondary electrons generated from said inspected object by said illumination.

1 3. The method for classifying defects as described in claim 1 wherein
2 said first category relates to defect criticality.

1 4. The method for classifying defects as described in claim 3 wherein
2 said second category relates to defect type.

1 5. The method for classifying defects as described in claim 4 wherein
2 said defect type includes one or more of the following: particle defects, flaw defects, circuit
3 pattern short defects, and circuit pattern open defects.

1 6. A method for classifying defects comprising:
2 imaging an inspected object to obtain an image;
3 extracting an image of a defect candidate from said image obtained by said
4 imaging step;
5 classifying said extracted defect candidate image into at least one defect type;
6 evaluating criticality of defect of said defect candidate image classified into
7 said at least one defect type; and
8 displaying on a screen said defect candidate image along with information
9 relating to the type of said at least defect type and said criticality of defect.

1 7. The method for classifying defects as described in claim 6 wherein
2 said imaging of said inspected object is performed by illuminating and scanning an electron
3 beam focused on said inspected object and detecting, in synchronization with said scanning,
4 secondary electrons generated from said inspected object by said illumination.

1 8. The method for classifying defects as described in claim 6 wherein
2 said defect types for classification include one or more of the following: particle defects, flaw
3 defects, circuit pattern short defects, and circuit pattern open defects.

1 9. A method for classifying defects comprising:
2 imaging an inspected object;
3 extracting images of defect candidates from said inspected object;
4 classifying said extracted defect candidate images into a first category;
5 classifying said extracted defect candidate images into a second category, said
6 second category relating to predicted yield from said inspected object; and
7 displaying on a single screen a distribution on said inspected object of said
8 defect candidates classified in said first category and information relating to said first
9 category classification and information relating to results of said second category
10 classification.

1 10. The method for classifying defects as described in claim 9 wherein
2 said imaging of said inspected object is performed by illuminating and scanning an electron
3 beam focused on said inspected object and detecting, in synchronization with said scanning,
4 secondary electrons generated from said inspected object by said illumination.

1 11. The method for classifying defects as described in claim 9 wherein an
2 image of said defect candidate is also displayed on said screen.

1 12. A device for classifying defects comprising:
2 an imaging component to obtain an image of an inspected object, having a
3 defect candidate;
4 an extracting component, coupled to said imaging component, to extract an
5 image of said defect candidate;

7 means for classifying second categories classifying said image of said defect
8 candidate extracted by said defect candidate extracting means into a second category; and
9 means for outputting displaying on a single screen a distribution on said
10 inspected object of said defect candidates classified in said first category and information
11 relating to said first category classification and information relating to results of said second
12 category classification.

1 18. A device for classifying defects as described in claim 17 wherein said
2 imaging means includes:
3 an electron beam optical system means illuminating and scanning an electron
4 beam focused on said inspected object;
5 means for detecting detecting, in synchronization with said scanning,
6 secondary electrons generated from said inspected object by said illumination of said electron
7 beam focused on said inspected object by said electron beam optical system means; and
8 means for forming images forming a secondary electron image of said
9 inspected object based on a secondary electron signal detected by said detecting means.

1 19. A device for classifying defects as described in claim 17 wherein said
2 first category classifying means classifies said defect candidates by defect type.

1 20. A device for classifying defects as described in claim 17 wherein said
2 defect type includes particle defects, flaw defects, circuit pattern defects, and voltage contrast
3 defects.

1 21. A device for classifying defects as described in claim 17 wherein said
2 second category classifying means classifies said defect candidates by defect criticality.

1 22. A device for classifying defects as described in claim 17 wherein said
2 outputting means outputs on said screen information relating to predicted yield from said
3 inspected object as said information relating to results of said second category classification.